ALEUTIANS SUBAREA CONTINGENCY PLAN

HAZMAT SECTION

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HAZMAT: PART ONE - HAZARD PROFILES

The Aleutians Subarea includes the southern portion of the Alaska Peninsula and the Aleutian and Pribilof Islands to the west. The region encompasses two Local Emergency Planning Districts (LEPD) as defined under State statute and the federal Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA). These two LEPDs are the Aleutians East Borough and the Aleutian and Pribilof Islands

The following information is derived from two separately completed hazards analyses: one for the Aleutians East Borough prepared by FPE/Roen Engineers, Inc., dated May 1994; and one covering the Aleutian and Pribilof Islands LEPD that was part of the *State and Regional Hazards Analysis* prepared by Easton Environmental, dated May 1995.

A. CHEMICAL INVENTORY

The Emergency Planning and Community Right-to-Know Act of 1986 (also known as Title III of the Superfund Amendments and Reauthorization Act of 1986 or SARA Title III) addresses hazardous chemicals, which are those chemicals that the U.S. Occupational Safety and Health Administration requires a Material Safety Data Sheet (MSDS). Among the thousands of chemicals required to have an MSDS, the EPA has identified over three hundred chemicals that pose a very high risk to life and health even if the exposure is short-term. The EPA classifies these chemicals as Extremely Hazardous Substances (EHS). The extremely hazardous substances reported or otherwise identified in significant quantities at facilities in the region are:

- anhydrous ammonia,
- chlorine, and
- sulfuric acid.

Due to the number of seafood processing facilities, anhydrous ammonia is present in the greatest quantities, followed by (in order of total amount) chlorine and sulfuric acid. Use of chlorine gas for both municipal and industrial water treatment in the region is common. As a consequence, chlorine gas is present at more facilities even though there is far more ammonia in the region. Sulfuric acid is found at a single facility.

Extremely hazardous substances are transported into the region from southern ports by water and delivered either direct to facilities or transported to facilities by truck over local road systems. While most substances are shipped via commercial freight carriers, a substantial amount is shipped aboard fishing industry vessels.

The following tables are from the *State and Regional Hazard Profiles - Task 5*, prepared by Easton Environmental. Additional information concerning the hazards of the Aleutians Subarea is available in the aforementioned volumes.

Table C-1: REGIONAL FACILITY INVENTORY

LEPD	Community	Facility	Substance	Max Amt (lbs)
Aleutian and Pribilof Islands	St. Paul	Icicle Seafoods - Arctic Star	Ammonia (Anhydrous)	38,000
Aleutian and Pribilof Islands	St. Paul	Trident Fisheries	Ammonia (Anhydrous)	11,000
Aleutian and Pribilof Islands	St. Paul	Unisea - Barge Unisea	Ammonia (Anhydrous)	11,400
Aleutian and Pribilof Islands	St. Paul	Unisea - Barge Unisea	Chlorine	2700
Aleutian and Pribilof Islands	Shemya	USAF - Eareckson AFB	Chlorine	7500
Aleutian and Pribilof Islands	Unalaska/ Dutch Harbor	Alyeska Seafoods – Unalaska Shore	Chlorine	1500
Aleutian and Pribilof Islands	Unalaska/ Dutch Harbor	Alyeska Seafoods – Unalaska Shore	Ammonia (Anhydrous)	49,000
Aleutian and Pribilof Islands	Unalaska/ Dutch Harbor	Arctic Alaska Fisheries - Dutch Harbor Warehouse	Sulfuric Acid	4000
Aleutian and Pribilof Islands	Unalaska/ Dutch Harbor	Arctic Alaska Fisheries - Dutch Harbor Warehouse	Ammonia (Anhydrous)	3500
Aleutian and Pribilof Islands	Unalaska/ Dutch Harbor	Arctic Alaska Fisheries - Dutch Harbor Warehouse	Chlorine	200
Aleutian and Pribilof Islands	Unalaska/ Dutch Harbor	Icicle Seafoods - Bering Star	Ammonia (Anhydrous)	38,000
Aleutian and Pribilof Islands	Unalaska/ Dutch Harbor	Royal Aleutian Seafoods	Chlorine	750
Aleutian and Pribilof Islands	Unalaska/ Dutch Harbor	Royal Aleutian Seafoods	Ammonia (Anhydrous)	9000
Aleutian and Pribilof Islands	Unalaska/ Dutch Harbor	Unalaska Chlorinator Building	Chlorine	2250
Aleutian and Pribilof Islands	Unalaska/ Dutch Harbor	Unalaska Chlorinator Plant (Storage)	Chlorine	3150
Aleutian and Pribilof Islands	Unalaska/ Dutch Harbor	Unalaska Well House 1	Chlorine	300
Aleutian and Pribilof Islands	Unalaska/ Dutch Harbor	Unalaska Well House 2	Chlorine	300
Aleutian and Pribilof Islands	Unalaska/ Dutch Harbor	UniSea - Dutch Harbor Shore Facilities	Ammonia (Anhydrous)	67,000
Aleutian and Pribilof Islands	Unalaska/ Dutch Harbor	UniSea - Dutch Harbor Shore Facilities	Chlorine	5400
Aleutian and Pribilof Islands	Unalaska/ Dutch Harbor	Westward Seafoods	Ammonia (Anhydrous)	42,000
Aleutians East Borough	Akutan	Trident Cannery	Ammonia (Anhydrous)	20,400
Aleutians East Borough	Akutan	Trident Cannery	Chlorine	6000
Aleutians East Borough	King Cove	Peter Pan Cannery	Ammonia (Anhydrous)	6450
Aleutians East Borough	King Cove	Peter Pan Cannery	Chlorine	4920
Aleutians East Borough	King Cove	Water Treatment Facility	Chlorine	300
Aleutians East Borough	Port Moller	Peter Pan Cannery	Ammonia (Anhydrous)	18,000
Aleutians East Borough	Port Moller	Peter Pan Cannery	Chlorine	1200
Aleutians East Borough	Sand Point	Trident Cannery	Ammonia (Anhydrous)	17,600
Aleutians East Borough	Sand Point	Trident Cannery	Chlorine	1300
Aleutians East Borough	Sand Point	Water Treatment Facility	Chlorine	1500

Table C-2: REGIONAL CHEMICAL DISTRIBUTION BY WEIGHT

Substance	LEPD	Community	Max Amt in Community (lbs)	Max Amt in LEPD (lbs)	Max Amt in Region (lbs)
Ammonia (Anhydrous)	Aleutian and Pribilof Islands	St. Paul	60,400		
Ammonia (Anhydrous)	Aleutian and Pribilof Islands	Unalaska/Dutch Harbor	208,500	268,900	
Ammonia (Anhydrous)	Aleutians East Borough	Akutan	20,400		
Ammonia (Anhydrous)	Aleutians East Borough	King Cove	6,450		
Ammonia (Anhydrous)	Aleutians East Borough	Port Moller	18,000		
Ammonia (Anhydrous)	Aleutians East Borough	Sand Point	17,600	62,450	331,350
Chlorine	Aleutian and Pribilof Islands	St. Paul	2,700		
Chlorine	Aleutian and Pribilof Islands	Shemya	7,500		
Chlorine	Aleutian and Pribilof Islands	Unalaska/Dutch Harbor	13,850	24,050	
Chlorine	Aleutians East Borough	Akutan	6,000		
Chlorine	Aleutians East Borough	King Cove	5,220		
Chlorine	Aleutians East Borough	Port Moller	1,200		
Chlorine	Aleutians East Borough	Sand Point	2,800	15,220	39,270
Sulfuric Acid	Aleutian and Pribilof Islands	Unalaska/Dutch Harbor	4,000	4,000	4,000

Table C-3: REGIONAL CHEMICAL DISTRIBUTION BY FACILITY

Substance	LEPD	Community	No. of Facilities in Community	No. of Facilities in LEPD	No. of Facilities in Region
Ammonia (Anhydrous)	Aleutian and Pribilof Islands	St. Paul	3		
Ammonia (Anhydrous)	Aleutian and Pribilof Islands	Unalaska/Dutch Harbor	6	9	
Ammonia (Anhydrous)	Aleutians East Borough	Akutan	1		
Ammonia (Anhydrous)	Aleutians East Borough	King Cove	1		
Ammonia (Anhydrous)	Aleutians East Borough	Port Moller	1		
Ammonia (Anhydrous)	Aleutians East Borough	Sand Point	1	4	13
Chlorine	Aleutian and Pribilof Islands	St. Paul	1		
Chlorine	Aleutian and Pribilof Islands	Shemya	1		
Chlorine	Aleutian and Pribilof Islands	Unalaska/Dutch Harbor	8	10	
Chlorine	Aleutians East Borough	Akutan	1		
Chlorine	Aleutians East Borough	King Cove	2		
Chlorine	Aleutians East Borough	Port Moller	1		
Chlorine	Aleutians East Borough	Sand Point	2	6	16
Sulfuric Acid	Aleutian and Pribilof Islands	Unalaska/Dutch Harbor	1	1	1

B. CHEMICAL RISKS

Of the three extremely hazardous substances found in substantial quantities in the region, the two compressed gases, anhydrous ammonia and chlorine, pose the greatest threat to communities. Of these, anhydrous ammonia poses the greatest threat. The total of the populations within vulnerable zones of ammonia facilities - termed the "hazard factor" - numbers 7,000.[1] By comparison, the hazard factor for chlorine facilities is 4,000.

The distribution of risk is approximately evenly distributed between the districts. The Aleutians and Pribilof Islands LEPD ranks first with a hazard factor of 6,000. The Aleutians East Borough LEPD is close with a hazard factor of 5,000.

1 Because a single population may occur within several vulnerable zones, the cumulative population will often exceed the total population of a given area. If, for example, a population is located in the vicinity of three facilities that store or use an extremely hazardous substance, it would be counted three times in the cumulative total.

Table C-4: REGIONAL RISK DISTRIBUTION BY SUBSTANCE

Substance	LEPD	Communities	Hazard Factor* in Community	Hazard Factor* in LEPD	Hazard Factor* in Region
Ammonia (Anhydrous)	Aleutian and Pribilof Islands	St. Paul	600		
Ammonia (Anhydrous)	Aleutian and Pribilof Islands	Unalaska/Dutch Harbor	4,595	5,195	
Ammonia (Anhydrous)	Aleutians East Borough	Akutan	250		
Ammonia (Anhydrous)	Aleutians East Borough	King Cove	451		
Ammonia (Anhydrous)	Aleutians East Borough	Port Moller	200		
Ammonia (Anhydrous)	Aleutians East Borough	Sand Point	900	1,801	6,996
Chlorine	Aleutian and Pribilof Islands	St. Paul	200		
Chlorine	Aleutian and Pribilof Islands	Shemya	200		
Chlorine	Aleutian and Pribilof Islands	Unalaska/Dutch Harbor	453	853	
Chlorine	Aleutians East Borough	Akutan	250		
Chlorine	Aleutians East Borough	King Cove	902		
Chlorine	Aleutians East Borough	Port Moller	200		
Chlorine	Aleutians East Borough	Sand Point	1,800	3,152	4,005
		TOTAL HAZARD FACTOR FOR REGION*			11,001

* The hazard factor is the total of the populations in each vulnerable zone for each facility and each chemical. Because a single population may occur within several vulnerable zones, hazard factors will often exceed total populations.

Table C-5: REGIONAL RISK DISTRIBUTION BY LEPD

LEPD	Community	Hazard Factor* in Community	Hazard Factor* in LEPD	Hazard Factor* in Region
Aleutian and Pribilof Islands	St. Paul	800		
Aleutian and Pribilof Islands	Shemya	200		
Aleutian and Pribilof Islands	Unalaska/Dutch Harbor	5,048	6,048	
Aleutians East Borough	Akutan	500		
Aleutians East Borough	King Cove	1,353		
Aleutians East Borough	Port Moller	400		
Aleutians East Borough	Sand Point	2,700	4,953	11,001

* The hazard factor is the total of the populations in each vulnerable zone for each facility and each chemical. Because a single population may occur within several vulnerable zones, hazard factors will often exceed total populations.

HAZMAT: PART TWO - HAZARDS ANALYSIS

This part presents the results of the hazards analysis conducted for the Aleutian and Pribilof Islands (API) LEPD by Easton Environmental (EE) and for the Aleutians East Borough (AEB) by FPE/Roen Engineers (FPE/R). The first section deals with extremely hazardous substances at fixed facilities. The second section deals with transportation of extremely hazardous substances. Both sections identify the EHSs present or in transit and the areas and institutions which may be at risk under certain release scenarios, and then characterize the risk in terms of the likelihood of a release and the severity of its consequences.

The information that follows is intended exclusively for planning purposes. Please note that conditions during an actual release could well result in impacts that exceed those predicted under planning scenarios.

A. FACILITIES

The following presents the results of the hazards analysis for facilities that store or use extremely hazardous substances. Results are presented beginning with the hazards identification, then the vulnerability analysis, and finally the risk analysis.

1. Hazards Identification: A total of 21 facilities report that they use or store three different extremely hazardous substances in amounts exceeding threshold planning quantities.

- CHEMICAL INVENTORY: Chlorine gas, anhydrous ammonia, and sulfuric acid are reported in amounts greater than threshold planning quantities. Their properties and how they affect humans are discussed below.

  Chlorine is a greenish-yellow gas with a characteristic odor. It is neither explosive nor flammable, but is a strong oxidizing agent and will support combustion. It is only slightly soluble in water. At about two and one-half times the density of air, it will spread as a dense gas flowing downhill under the influence of gravity. The chemical has a strong affinity for many substances and will usually produce heat on reacting. While dry chlorine is non-corrosive at ordinary temperatures, it becomes extremely corrosive in the presence of moisture.

  Chlorine gas is primarily a respiratory toxicant. In sufficient concentrations, the gas affects the mucous membranes, the respiratory system and the skin. In high concentrations it can permanently damage the lungs and can cause death by suffocation. Liquid chlorine will cause burns if it comes in contact with skin or eyes.

  Anhydrous ammonia is a colorless gas with a characteristic odor. The term "anhydrous" is used to distinguish the pure form of the compound from solutions of ammonia in water. Like chlorine, anhydrous ammonia is neither explosive nor flammable, but will support combustion. It readily dissolves in water to form an aqua ammonia solution. Anhydrous ammonia is considerably lighter than air and will rise in absolutely dry air. As a practical matter, however, anhydrous ammonia immediately

reacts with any humidity in the air and will often behave as a heavier gas. The chemical reacts with and corrodes copper, zinc and many alloys.

Anhydrous ammonia affects the body in much the same way as chlorine gas. Like chlorine, anhydrous ammonia gas is primarily a respiratory toxicant. In sufficient concentrations, the gas affects the mucous membranes, the respiratory system and the skin. In high concentrations it can cause convulsive coughing, difficult and painful breathing, and death. Anhydrous ammonia will cause burns if it comes in contact with skin or eyes.

Sulfuric acid is a dense, colorless, oily liquid. It is highly reactive with a large number of other substances and is readily soluble in water with release of heat. Fumes are released from the liquid through evaporation. Heat, as a result of fire or other chemical reaction, can significantly increase emissions.

Both the liquid and its solutions will cause burns if allowed to come in contact with skin or eyes. Fumes are highly toxic, and reaction of the acid with a variety of substances can produce other toxic gases.

- FACILITY INVENTORY: An inventory of facilities storing or using extremely hazardous substances in amounts exceeding threshold planning quantities is presented in Table C-6.

  Facilities storing or using extremely hazardous substances are located in Shemya, St. Paul, Unalaska/Dutch Harbor, Akutan, King Cove, Port Moller, and Sand Point.. Extremely hazardous substances encountered most frequently are chlorine and anhydrous ammonia. Only the Arctic Alaska Fisheries Warehouse in Unalaska reports an amount of sulfuric acid in excess of threshold planning quantities. In this case, the sulfuric acid is used in conjunction with fish meal production.

  Gaseous chlorine is used widely by seafood processors and public facilities for water and wastewater disinfection. With one exception, the gas is found in use or in storage in standard 90-, 100-, or 150-lb pressurized cylinders. Eareckson Air Force Base, however, reports a 7,500-lb container of chlorine gas.[2]

  Anhydrous ammonia is used as a coolant for large refrigeration systems in the planning district. While normally stored and transported in 150-lb and 2,000-lb pressurized cylinders, much larger quantities are often present in the pressurized vessels and piping of the refrigeration systems. Anhydrous ammonia is found at seafood processing facilities and warehouses in this planning district in maximum quantities ranging from 2,250 to 67,000 lbs.

2 Several unsuccessful attempts were made to verify the unusually large and odd container size. A 2000-lb container size was assumed for modeling purposes.

Table C-6: EXTREMELY HAZARDOUS SUBSTANCES FACILITY INVENTORY

Community	Facility	Substance	Maximum Quantity (lbs)
St. Paul	Icicle Seafoods - Arctic Star	Ammonia (Anhydrous)	38,000
St. Paul	Trident Fisheries	Ammonia (Anhydrous)	11,000
St. Paul	Unisea – Barge Unisea	Ammonia (Anhydrous)	11,400
St. Paul	Unisea – Barge Unisea	Chlorine	2700
Shemya	USAF – Eareckson Air Station	Chlorine	7500
Unalaska/Dutch Harbor	Alyeska Seafoods - Unalaska Shore	Chlorine	1500
Unalaska/Dutch Harbor	Alyeska Seafoods - Unalaska Shore	Ammonia (Anhydrous)	49,000
Unalaska/Dutch Harbor	Arctic Alaska Fisheries - Dutch Harbor Warehouse	Sulfuric Acid	4000
Unalaska/Dutch Harbor	Arctic Alaska Fisheries - Dutch Harbor Warehouse	Ammonia (Anhydrous)	3500
Unalaska/Dutch Harbor	Arctic Alaska Fisheries - Dutch Harbor Warehouse	Chlorine	200
Unalaska/Dutch Harbor	Icicle Seafoods - Bering Star	Ammonia (Anhydrous)	38,000
Unalaska/Dutch Harbor	Royal Aleutian Seafoods	Chlorine	750
Unalaska/Dutch Harbor	Royal Aleutian Seafoods	Ammonia (Anhydrous)	9000
Unalaska/Dutch Harbor	Unalaska Chlorinator Building	Chlorine	2250
Unalaska/Dutch Harbor	Unalaska Chlorinator Plant (Storage)	Chlorine	3150
Unalaska/Dutch Harbor	Unalaska Well House 1	Chlorine	300
Unalaska/Dutch Harbor	Unalaska Well House 2	Chlorine	300
Unalaska/Dutch Harbor	Unisea – Dutch Harbor Shore Facilities	Ammonia (Anhydrous)	67,000
Unalaska/Dutch Harbor	Unisea – Dutch Harbor Shore Facilities	Chlorine	5400
Unalaska/Dutch Harbor	Westward Seafoods	Ammonia (Anhydrous)	42,000
Akutan	Trident Cannery	Ammonia (Anhydrous)	20,400
Akutan	Trident Cannery	Chlorine	6000
King Cove	Peter Pan Cannery	Ammonia (Anhydrous)	6450
King Cove	Peter Pan Cannery	Chlorine	4920
King Cove	Water Treatment Facility	Chlorine	300
Port Moller	Peter Pan Cannery	Ammonia (Anhydrous)	18,000
Port Moller	Peter Pan Cannery	Chlorine	1200
Sand Point	Trident Cannery	Ammonia (Anhydrous)	17,600
Sand Point	Trident Cannery	Chlorine	1300
Sand Point	Water Treatment Facility	Chlorine	1500

2. Vulnerability Assessment: The vulnerability assessment identifies areas, institutions, and populations that could be exposed in the event of a release. The vulnerable zones and the special populations within those zones are described below.

- VULNERABLE ZONES are estimated areas in which persons may be exposed to concentrations of released airborne substances at levels of concern to human health. Their size is based on computer models which estimate the distance a release could travel before it disperses and is diluted to concentrations below levels of concern. This "vulnerable distance" is a function of the type and amount of substance released, the release rate, and atmospheric dispersion mechanics. Vulnerable distances form the radii for circular vulnerable zones.

Vulnerable zones are calculated for both “credible worst case” and “more likely case” release scenarios. The credible worst case scenario is the primary planning scenario and is the basis for subsequent risk analyses. According to EE, it represents a large scale failure and release event, but does not encompass the total failure conditions that might be experienced during a catastrophic event, such as a major earthquake. Note that this scenario is defined differently by FPE/R as an incident that involves the instantaneous release of all the material on site, and could be equated to the potential release scenario during a fire, explosion, or seismic event. The more likely release scenario represents a release under more-or-less typical or average conditions. It is intended to be of the type and magnitude that appears with some frequency in the historical record. This scenario is defined by FPE/R as the instantaneous release of all material from one storage container or process line.

Assumed release quantities and calculated vulnerable distances for the credible worst case and more likely case scenarios are summarized in Table C-7. Release quantities indicated for communities in the AEB (Akutan, King Cove, Port Moller, Sand Point) are based on the “credible worst case” release scenarios.

The very small vulnerable zones for sulfuric acid are a result of assuming that the liquid is released at, and remains at, ambient temperatures. In this case, evaporation of the sulfuric acid into the air will occur at a relatively slow rate. On the other hand, sulfuric acid is highly reactive, and will produce heat upon reacting with a large number of other chemicals -- including water. Another approach would be to assume that the sulfuric acid will react upon release generating heat, and that evaporation will occur at the liquid boiling point. In this case, the release rate will be considerably faster and the vulnerable distance far greater:

Vulnerable Distance (in feet) at	Ambient Temperature	Boiling Point
Credible Worst Case	4	9,204
More Likely Case	2	4,798

Table C-7: Facility Vulnerable Distances

Community	Facility	Substance	Release Quantity (lbs)	Credible Worst Case (distance from release in ft)	More Likely Case (distance from release in ft)
Shemya	Eareckson Air Station Water Plant	Chlorine	2,000	13,558	7,067
St. Paul	Icicle Seafoods Arctic Star	Ammonia	36,000	10,776	5,780
St. Paul	Trident Fisheries	Ammonia	9,000	4,100	2,634
St. Paul	Unisea - Barge Unisea	Ammonia	9,400	5,033	2,700
St. Paul	Unisea - Barge Unisea	Chlorine	150	2,918	1,521
Unalaska/ Dutch Harbor	Alyeska Seafoods -Shore Facilities	Ammonia	49,000	12,835	6,884
Unalaska/ Dutch Harbor	Alyeska Seafoods Shore Facilities	Chlorine	150	2,918	1,521
Unalaska/ Dutch Harbor	Arctic Alaska Fisheries – Warehouse	Ammonia	3,500	2,874	1,542
Unalaska/ Dutch Harbor	Arctic Alaska Fisheries – Warehouse	Chlorine	150	2,918	1,521
Unalaska/ Dutch Harbor	Arctic Alaska Fisheries – Warehouse	Sulfuric Acid	4000	4	2
Unalaska/ Dutch Harbor	Icicle Seafoods Bering Star	Ammonia	36,000	10,776	5,780
Unalaska/ Dutch Harbor	Royal Aleutian Seafoods	Chlorine	150	2,918	1,521
Unalaska/ Dutch Harbor	Royal Aleutian Seafoods	Ammonia	9,000	4,910	2,634
Unalaska/ Dutch Harbor	Unalaska Storage Facility	Chlorine	150	2,918	1,521
Unalaska/ Dutch Harbor	Unalaska Water Chlorinator	Chlorine	150	2,918	1,521
Unalaska/ Dutch Harbor	Unalaska Water Well #1	Chlorine	150	2,918	1,521
Unalaska/ Dutch Harbor	Unalaska Water Well #2	Chlorine	150	2,918	1,521
Unalaska/ Dutch Harbor	Unisea - Shore Facilities	Ammonia	67,000	15,326	8,221
Unalaska/ Dutch Harbor	UniSea – Shore Facilities	Chlorine	150	2,918	1,521
Unalaska/ Dutch Harbor	Westward Seafoods	Ammonia	42,000	11,761	6,308
Akutan	Trident Cannery	Ammonia	20,000	5,280	2,112
Akutan	Trident Cannery	Chlorine	8,000	6,864	1,584
King Cove	Peter Pan Cannery	Ammonia	5,000	3,432	582
King Cove	Peter Pan Cannery	Chlorine	3,750	8,448	1,584
King Cove	Water Treatment Facility	Chlorine	300	2,112	1,584
Port Moller	Peter Pan Cannery	Ammonia	15,000	6,402	582
Port Moller	Peter Pan Cannery	Chlorine	1,200	5,280	1,584
Sand Point	Trident Cannery	Ammonia	18,000	5,280	2,112
Sand Point	Trident Cannery	Chlorine	1,300	6,864	1,584
Sand Point	Water Treatment Facility	Chlorine	1,500	5,280	1,584

- SPECIAL POPULATIONS are those persons in a specific building or group of buildings that, in the event of a release, may need more or special assistance, may be more susceptible to health effects, or may be needed to provide assistance during a release. Special populations include the medically or physically infirm, the elderly, and/or the very young. Vulnerable facilities include schools, nursing homes, hospitals and medical facilities. Public safety facilities, such as fire and police stations are also considered vulnerable facilities. Emergency response planning and risk reduction efforts should take these special populations and vulnerable facilities into account.

Vulnerable facilities with special populations that could be at risk from a release are summarized in the Table C-8. It should be noted that no special populations were identified within the vulnerable zones on Shemya because military facilities are not considered public facilities. Eareckson Air Station, however, may have military clinics, schools, and other special populations vulnerable to the effects of a release.

Table C-8: VULNERABLE FACILITIES WITH SPECIAL POPULATIONS

Community	Facility	Substance	Vulnerable Facilities
Shemya	Eareckson Air Station Water Plant	Chlorine	None Identified
St. Paul	Icicle Seafoods - Arctic Star	Ammonia	St. Paul School
St. Paul	Trident Fisheries	Ammonia	St. Paul School
St. Paul	UniSea - Barge UniSea	Ammonia	St. Paul School
St. Paul	UniSea - Barge UniSea	Chlorine	None Identified
Unalaska/Dutch Harbor	Alyeska Seafoods - Shore Facilities	Ammonia	Clinic
			School
			Public Safety
			Day Care
Unalaska/Dutch Harbor	Alyeska Seafoods - Shore Facilities	Chlorine	Clinic
			School
			Public Safety
Unalaska/ Dutch Harbor	Arctic Alaska Fisheries - Warehouse	Ammonia	None Identified
Unalaska/ Dutch Harbor	Arctic Alaska Fisheries - Warehouse	Chlorine	None Identified
Unalaska/ Dutch Harbor	Arctic Alaska Fisheries - Warehouse	Sulfuric Acid	None Identified
Unalaska/ Dutch Harbor	Icicle Seafoods - Bering Star	Ammonia	None Identified
Unalaska/ Dutch Harbor	Royal Aleutian Seafoods	Chlorine	None Identified
Unalaska/ Dutch Harbor	Royal Aleutian Seafoods	Ammonia	Clinic
			School
			Public Safety
Unalaska/ Dutch Harbor	Unalaska Storage Facility	Chlorine	None Identified
Unalaska/ Dutch Harbor	Unalaska Water Chlorinator	Chlorine	None Identified
Unalaska/ Dutch Harbor	Unalaska Water Well #1	Chlorine	Day Care
Unalaska/ Dutch Harbor	Unalaska Water Well #2	Chlorine	Day Care
Unalaska/ Dutch Harbor	Unisea - Shore Facilities	Ammonia	Clinic
			School
			Public Safety
			Day Care
Unalaska/ Dutch Harbor	Unisea - Shore Facilities	Chlorine	None Identified

Community	Facility	Substance	Vulnerable Facilities
Unalaska/ Dutch Harbor	Westward Seafoods	Ammonia	Clinic
			School
			Public Safety
			Day Care
Akutan	Trident Cannery	Ammonia	School
Akutan	Trident Cannery	Chlorine	School
King Cove	Peter Pan Cannery	Ammonia	School
			Clinic
			Public Safety
King Cove	Peter Pan Cannery	Chlorine	School
			Clinic
			Public Safety
King Cove	Water Treatment Facility	Chlorine	None Identified
Port Moller	Peter Pan Cannery	Ammonia	None Identified
Port Moller	Peter Pan Cannery	Chlorine	None Identified
Sand Point	Trident Cannery	Ammonia	School
Sand Point	Trident Cannery	Chlorine	School
Sand Point	Water Treatment Facility	Chlorine	None Identified

3. Risk Analysis: Risk is a function of two variables: the likelihood or probability of a release occurring, and the severity of its consequences. The risk analysis includes estimating the likelihood and severity of a release from each facility, and plotting the result on a probability - severity matrix to indicate the overall risk ranking. The risk ranking is intended for use by local emergency planners in determining priorities for emergency planning and risk reduction efforts.

The severity and probability rankings for facilities in the Aleutians Subarea are discussed below. The firms of FPE/R and EE use different terminology and definitions in assigning severity, probability, and level of risk to facilities. Therefore, separate tables will provide the information for each LEPD.

a. Aleutian and Pribilof Islands Local Emergency Planning District

- THE SEVERITY RANKING for each facility with an extremely hazardous substance is based on the number of people that are at-risk, that is, within the impact zone of a potential "credible worst case" release. The at-risk population does not include facility employees. The impact zone is the portion of a vulnerable zone affected by a particular wind direction. Thus the number of people in the impact zone is a fraction of the total population of the vulnerable zone. Severity ranking categories are summarized below. Estimates of the resident populations in each "credible worst case" impact zone and the consequent severity rating are summarized in Table C-9.

Severity Rating	Potentially Affected Population
Catastrophic	More than 1000
Severe	100 to 1000
Moderate	10 to 100
Slight	Less than 10

Population densities are derived from census tract data and are used to estimate at-risk populations. Estimates for potentially affected populations in communities with extremely hazardous substances are:

- 283 persons in Shemya,
- 13 to 38 persons in St. Paul,
- 0 to 173 persons in the Unalaska/Dutch Harbor area.

Of the 21 release scenarios modeled for the API LEPD, five would have a severe effect, five would have a moderate effect, and 11 would have a slight effect.

Severe consequences could result from releases of chlorine at Eareckson Air Force Base and releases of ammonia in St. Paul and the Unalaska/Dutch Harbor area. A chlorine release at Eareckson Air Force Base on Shemya has the potential to affect the greatest population. Ammonia releases from the Icicle Seafoods barge Arctic Star in St. Paul and from shore facilities of Alyeska Seafoods, Unisea, and Westward Seafoods in the Unalaska/Dutch Harbor area could each adversely affect more than one hundred people.

Table C-9: ALEUTIAN AND PRIBILOF ISLANDS FACILITY SEVERITY RATINGS

Community	Facility	Substance	Worst Case Impact Area (sq. mile)	Population Density (per sq. mile)	Worst Case Impacted Population	Severity Rating
Shemya	Eareckson Air Station Water Plant	Chlorine	2.30	122.84	283	Severe
St. Paul	Icicle Seafoods - Arctic Star	Ammonia	1.45	119.77	174	Severe
St. Paul	Trident Fisheries	Ammonia	0.30	119.77	36	Moderate
St. Paul	UniSea- Barge Unisea	Ammonia	0.32	119.77	38	Moderate
St. Paul	UniSea- Barge Unisea	Chlorine	0.11	119.77	13	Moderate
Unalaska/ Dutch Harbor	Alyeska Seafoods - Shore Facilities	Ammonia	2.06	58.79	121	Severe
Unalaska/ Dutch Harbor	Alyeska Seafoods - Shore Facilities	Chlorine	0.11	58.79	6	Slight
Unalaska/ Dutch Harbor	Arctic Alaska Fisheries-Warehouse	Ammonia	0.10	58.79	6	Slight
Unalaska/ Dutch Harbor	Arctic Alaska Fisheries-Warehouse	Chlorine	0.11	58.79	6	Slight
Unalaska/ Dutch Harbor	Arctic Alaska Fisheries-Warehouse	Sulfuric Acid	0.00	58.79	0	Slight
Unalaska/ Dutch Harbor	Icicle Seafoods - Bering Star	Ammonia	1.45	58.79	85	Moderate
Unalaska/ Dutch Harbor	Royal Aleutian Seafoods	Chlorine	0.11	58.79	6	Slight
Unalaska/ Dutch Harbor	Royal Aleutian Seafoods	Ammonia	0.30	58.79	18	Moderate
Unalaska/ Dutch Harbor	Unalaska Storage Facility	Chlorine	0.11	58.79	6	Slight
Unalaska/ Dutch Harbor	Unalaska Water Chlorinator	Chlorine	0.11	58.79	6	Slight
Unalaska/ Dutch Harbor	Unalaska Water Well #1	Chlorine	0.11	58.79	6	Slight
Unalaska/ Dutch Harbor	Unalaska Water Well #2	Chlorine	0.11	58.79	6	Slight
Unalaska/ Dutch Harbor	Unisea - Shore Facilities	Ammonia	2.94	58.79	173	Severe
Unalaska/ Dutch Harbor	Unisea - Shore Facilities	Chlorine	0.11	58.79	6	Slight
Unalaska/ Dutch Harbor	Westward Seafoods	Ammonia	1.73	58.79	102	Severe

- PROBABILITY RATINGS are used to characterize the probability or frequency of a release occurring. Methods to estimate release frequencies are provided by the Federal Emergency Management Agency. Probability ranking categories are summarized below. Table C-10 summarizes the frequency estimates and probability rankings for facilities in the API LEPD.

Probability Rating	Frequency
Frequent	Once or more per year
Periodical	Once every 1 to 10 years
Occasional	Once every 10 to 100 years
Possible	Once every 100 to 10,000 years
Improbable	Less than once every 10,000 year

While accidents have occurred, and will undoubtedly continue to occur, none of the types of facilities in the planning district have a record of high failure frequency resulting in the release of extremely hazardous substances. Given the relatively large number of chlorine cylinders in storage at the Unalaska storage facility, the likelihood of a release is rated as "occasional" for that facility while releases from all other extremely hazardous substance facilities are rated as "possible."

Table C-10: ALEUTIAN AND PRIBILOF ISLANDS FACILITY RATINGS

Community	Facility	Substance	Severity Ranking	Estimated Frequency	Frequency Rating
Shemya	Eareckson AS Water Plant	Chlorine	Severe	3.75E-04	Possible
St. Paul	Icicle Seafoods - Arctic Star	Ammonia	Severe	1.06E-04	Possible
St. Paul	Trident Fisheries	Ammonia	Moderate	1.22E-04	Possible
St. Paul	Unisea - Barge Unisea	Ammonia	Moderate	1.21E-04	Possible
St. Paul	Unisea - Barge Unisea	Chlorine	Moderate	1.80E-03	Possible
Unalaska/Dutch Harbor	Alyeska Seafoods - Shore Facilities	Ammonia	Severe	1.00E-04	Possible
Unalaska/Dutch Harbor	Alyeska Seafoods - Shore Facilities	Chlorine	Slight	1.00E-03	Possible
Unalaska/Dutch Harbor	Arctic Alaska Fisheries - Warehouse	Ammonia	Slight	1.33E-03	Possible
Unalaska/Dutch Harbor	Arctic Alaska Fisheries - Warehouse	Chlorine	Slight	1.00E-03	Possible
Unalaska/Dutch Harbor	Arctic Alaska Fisheries - Warehouse	Sulfuric Acid	Slight	1.00E-03	Possible
Unalaska/Dutch Harbor	Icicle Seafoods - Bering Star	Ammonia	Moderate	1.06E-04	Possible
Unalaska/Dutch Harbor	Royal Aleutian Seafoods	Chlorine	Slight	5.00E-04	Possible
Unalaska/Dutch Harbor	Royal Aleutian Seafoods	Ammonia	Moderate	1.00E-04	Possible
Unalaska/Dutch Harbor	Unalaska Storage Facility	Chlorine	Slight	2.10E-02	Occasional
Unalaska/Dutch Harbor	Unalaska Water Chlorinator	Chlorine	Slight	1.50E-03	Possible
Unalaska/Dutch Harbor	Unalaska Water Well #1	Chlorine	Slight	2.00E-04	Possible
Unalaska/Dutch Harbor	Unalaska Water Well #2	Chlorine	Slight	2.00E-04	Possible
Unalaska/Dutch Harbor	Unisea - Shore Facilities	Ammonia	Severe	1.00E-04	Possible
Unalaska/Dutch Harbor	Unisea - Shore Facilities	Chlorine	Slight	3.60E-03	Possible

b. Aleutians East Borough Local Emergency Planning District

- SEVERITY ESTIMATES take into account the hazard of the materials involved in a release in the light of several factors: the concentration basis; whether the toxicity is acute or chronic; and the corrosivity, reactivity, and ignitability of the materials. Severity is also a function of the degree of impact to the people exposed. Three levels of severity are defined by FPE/R: low, medium, and high.

  Low severity levels are associated with materials that are isolated from human populations; are present in small volumes and in small containers; are non-toxic, non-reactive, non-flammable, and non-corrosive; and have high combustion temperatures and high Immediately Dangerous to Life and Health (IDLH) or airborne concentration Level of Concern (LOC) values.

  Medium severity levels are associated with materials that are in close proximity to human populations; are present in small to medium volumes and are held in medium-sized containers; have chronic toxicity; are slightly reactive; are flammable and corrosive; and have low combustion temperatures and low to mid-range values for LOC or IDLH.

  High severity levels are associated with materials with acute toxicity; high reactivity; explosive properties; flammable with flash points below, at, or slightly above ambient

temperatures; highly corrosive; if combusted have hazardous products; low LOC or IDLH value, close proximity to human populations; large volumes present; and are in large and medium-sized containers or large volumes are present in a restricted/small area.

All ten release scenarios considered by FPE/R for the AEB LEPD have been ranked as high severity.

- FREQUENCY ESTIMATES for HazMat releases for the AEB LEPD are categorized by FPE/R as low, medium, or high. FPE/R bases the likelihood of a harmful release on existing operational practices; physical factors (such as age of a facility, volume of material present, how it is used, resupply needs, location, and security); historical operations of the facility; and planning and operational activities that can reduce the potential for a release, such as safety equipment and training.

  A low likelihood of release would be assigned to a facility if the occurrence of a release is considered unlikely during the facility's expected lifetime. If an occurrence is considered to be likely, a medium likelihood of release would be assigned. A high likelihood would be assigned to a facility where the probability of release is sufficiently high to expect an occurrence of at least one release during the facility's operational life.

- THE LEVEL OF RISK OR CONCERN is established after the likelihood of occurrence and the severity of release have been determined.

  Major concern defines those incidents that have a medium to high likelihood of occurrence and a medium to high level of severity. All of the release scenarios for the facilities in the AEB are considered as Major Concerns.

  Medium concern defines incidents with either a high likelihood of release coupled with a potentially low impact, or low likelihood of release coupled with impacts that are potentially medium to high in severity.

  Low concern defines potential incidents that have a medium to low likelihood of occurrence and low levels of severity.

Table C-11: ALEUTIAN AND PRIBILOF ISLANDS FACILITY RATINGS

Community	Facility	Substance	Severity Rating	Frequency Rating	Level of Concern
Akutan	Trident Cannery	Ammonia	High	Medium-High	Major
Akutan	Trident Cannery	Chlorine	High	Medium-High	Major
King Cove	Peter Pan Cannery	Ammonia	High	Medium-High	Major
King Cove	Peter Pan Cannery	Chlorine	High	Medium-High	Major
King Cove	Water Treatment Facility	Chlorine	High	Medium	Major
Port Moller	Peter Pan Cannery	Ammonia	High	Medium-High	Major
Port Moller	Peter Pan Cannery	Chlorine	High	Medium-High	Major
Sand Point	Trident Cannery	Ammonia	High	Medium-High	Major
Sand Point	Trident Cannery	Chlorine	High	Medium-High	Major
Sand Point	Water Treatment Facility	Chlorine	High	Medium-High	Major

B. TRANSPORTATION

This section presents the results of the analysis of hazards associated with transportation of extremely hazardous substances in amounts exceeding threshold planning quantities in the planning district. Results are presented beginning with the hazards identification, followed by the vulnerability analysis, and finally the risk analysis.

1. Hazards Identification: Three extremely hazardous substances are known to be transported into and within the planning district in amounts exceeding threshold planning quantities.

- Chemical Inventory: Anhydrous ammonia, chlorine gas, and sulfuric acid solutions are transported into and through the planning district in amounts greater than threshold planning quantities. Their properties and health effects were discussed previously. Though no specific information is available, other substances destined for ports outside of the planning district may also be transported through the district.

- Water Transportation: The vast majority of extremely hazardous substances are transported into the planning district by water. Shipments originating in the southern contiguous states are delivered to the ports of Unalaska and Dutch Harbor, St. Paul and Shemya Island. Commercial marine carriers and the substances and quantities shipped in the API LEPD are identified below in Table C-12.

Table C-12: Marine Transportation

Route	From	To	Substance	Container Size (lbs)	Shipper
Aleutian Islands	LEPD Boundary	LEPD Boundary	Ammonia	150	Crowley Marine
Aleutian Islands	LEPD Boundary	Unalaska	Chlorine	150	Sealand/Western Pioneer
Aleutian Islands	LEPD Boundary	Unalaska	Ammonia	2000	Coastal Transportation
Aleutian Islands	LEPD Boundary		Chlorine	150	Coastal Transportation
Aleutian Islands	LEPD Boundary	Unalaska	Ammonia	2000	Arctic Alaska Seafoods
Aleutian Islands	LEPD Boundary	Unalaska	Chlorine	150	Arctic Alaska Seafoods
Aleutian Islands	LEPD Boundary	Unalaska	Sulfuric Acid	200	Arctic Alaska Seafoods
Aleutian Islands	LEPD Boundary	Unalaska	Chlorine	150	Western Pioneer
Aleutian Islands	LEPD Boundary	Unalaska	Chlorine	150	Sealand/Western Pioneer
Aleutian Islands	LEPD Boundary	Unalaska	Ammonia	2000	Sealand/Western Pioneer
Aleutian Islands	LEPD Boundary	Unalaska	Ammonia	150	North Coast
Aleutian Islands	LEPD Boundary	Unalaska	Ammonia	2000	Western Pioneer
Aleutian Islands	LEPD Boundary	Unalaska	Ammonia	2000	Western Pioneer
Aleutian Islands	LEPD Boundary	Unalaska	Ammonia	2000	Western Pioneer/Sealand
Aleutian Islands	LEPD Boundary	St. Paul	Chlorine	150	Western Pioneer/Coastal Transportation
Aleutian Islands	LEPD Boundary	St. Paul	Ammonia	2000	Western Pioneer/Coastal Transportation
Aleutian Islands	LEPD Boundary	Shemya	Chlorine	150	military
Below, transporters that may carry other chemicals in bulk through the API LEPD					
Aleutian Islands	LEPD Boundary	Unalaska/Beyond			Sealand to Asia

Commercial marine carriers include Crowley Marine, Samson Tug and Barge, Western Pioneer and Sealand. In addition, seafood industry vessels are used to deliver extremely hazardous substances to processing facilities and warehouses in the district.

Extremely hazardous substances shipped to facilities in Unalaska/Dutch Harbor include anhydrous ammonia in 150-lb and 2,000-lb pressurized vessels, chlorine gas in 150-lb pressurized vessels, and sulfuric acid in 200-lb containers.

Extremely hazardous substances shipped to facilities in St. Paul include anhydrous ammonia in 2,000-lb pressurized containers and chlorine gas in 150-lb pressurized vessels.

Eareckson Air Station reports receiving shipments of chlorine gas in 150-lb containers. Because of previously reports on larger containers at the air station, a 2,000-lb container size was used for modeling purposes. Extremely hazardous substances shipped to the air station also include anhydrous ammonia.

In addition to the extremely hazardous substances delivered to communities and facilities in the planning districts, extremely hazardous substances bound for ports to the north and west are also transported by ship or barge through the planning district. Sealand, for example, indicates that containerized vessels bound for Asia and often stopping in Unalaska may contain hazardous cargos.

Off-shore processors and factory trawlers are also known to carry and use ammonia for refrigeration and chlorine for water purification systems. These processors and trawlers will occasionally enter ports in the planning district.

- Road Transportation: Extremely hazardous substances are trucked from local ports to facilities over local road systems. Ammonia is transported within St. Paul and Unalaska/Dutch Harbor in 150- and 2,000-lb containers. Chlorine is also trucked on local roads within the Unalaska/Dutch Harbor area and in St. Paul in 150-lb containers.

- Air Transportation: Reeve Aleutian Airways indicates that they carry some hazardous materials to communities in the planning districts though no shipments exceed threshold planning quantities.

2. Vulnerability Assessment: As with fixed facilities, the transportation vulnerability assessment attempts to identify areas, institutions, and populations that could be exposed in the event of a release. In the case of transportation of a substance along a specific route, the vulnerable zone is estimated by calculating credible worst case and more likely case vulnerable zones for a single point on the route and then translating the zones along the entire length of the route. Where a specific route cannot be identified, the vulnerable zone is specified as a distance from an unspecified location of a vessel or vehicle. Such is often the case for marine transportation where routes vary from one shipment to the next. Fortunately, population densities are low along many transportation routes in Alaska, and the effect of a less well-defined zone is of no practical consequence.

- Water Transportation: Vulnerable zones for marine transportation of extremely hazardous substances in the planning district are as follows:

  - 2,918 feet for vessels transporting one or more 150-lb chlorine containers,
  - 13,558 feet for vessels transporting one or more 2,000-lb chlorine containers,
  - 482 feet for vessels transporting one or more 150-lb ammonia containers, and
  - 2,093 feet for vessels transporting one or more 2,000-lb ammonia containers.

  If the release is assumed to occur at ambient temperatures, the 200-lb containers of sulfuric acid shipped to the Unalaska/Dutch Harbor area would result in essentially no vulnerable zone. Emergency planners need to consider, however, the potential for sulfuric acid to react upon release and the potential for a significant impact area.

- Road Transportation: For the most part, containers of chlorine, ammonia and sulfuric acid off-loaded at local docks in Unalaska/Dutch Harbor, St. Paul, and Shemya are trucked to facilities on local roads. At some seafood processing facilities, however, containers are off-loaded at the facility itself.

  As with marine transportation, vulnerable zones are not specified for short sections of local road systems. Vulnerable distances for trucks transporting extremely hazardous substances would be the same as those estimated for marine transportation. Communities may want to consider the potential for accidents on local roads in their emergency planning and risk reduction efforts.

3. Risk Analysis: Unlike the semi-quantitative method used to estimate risk from potential releases of extremely hazardous substances at fixed facilities, transportation releases on local roadways and waterways require a more qualitative approach.

- Water Transportation: The severity of a release during marine transport will vary with the specific vessel location at the time of release. Over most of the marine transport routes, it is unlikely that the general population would be exposed in the event of a release. As vessels move into port, however, releases could affect inland areas and the severity of potential release consequences increases.

  Due to the limited number of containers and shipments per year, the likelihood of a release during marine transport in the planning districts is relatively small. As with the severity of the consequences of an accident, the likelihood of an accident and a consequent release increases as vessels approach harbor. Planners should also consider that factory trawlers and floating processors, which often contain substantial quantities of extremely hazardous substances, can affect local populations even in communities that do not have fixed facilities with extremely hazardous substances.

- Road Transportation: The severity of the consequences of a release during transport of extremely hazardous substances along local roads is also difficult to quantify. In most cases, the length of road is relatively short and any release would affect the same general area as a release from the destination facility. Since chlorine is found in the same containers in transit as in use, the severity of a release during transport along local roads may be assumed to be the same as that for a release from the facility. The same assumption cannot be made for sulfuric acid or anhydrous ammonia where the substances are most often transported in containers that are smaller than those in which they are found at facilities.

  Methods used to estimate the likelihood of an accident and release during truck transport suggest that release frequencies are a function of road-miles traveled. As a result, probabilities of a release over short sections of local roads are relatively small. In addition, because of the similar numbers and types of containers, risk is largely a function of severity rather than probability. While release consequences may, in some cases, be as severe as those associated with facilities, the overall risk associated with local road transport of extremely hazardous substance is small due to the small probability of a release occurring. In relative terms, the risk is greater than marine transport, but less than that posed by facilities in the district.

HAZMAT: PART THREE - RESPONSE CAPABILITIES

A. RESPONSE OBJECTIVES

There are two basic response objectives during a HazMat incident and these are defined as follows:

Defensive Response Objective: Detect the release and initiate immediate defensive measures including agency and public notification, plume movement prediction, and public evacuation or sheltering in-place.

Offensive Response Objective: Provide offensive measures including testing and monitoring chemical concentrations, setting hazard zones, then entering hazardous atmospheres and controlling the release.

B. FEDERAL RESPONSE CAPABILITIES

Within the Alaska Region, federal agencies do not possess a HazMat offensive response capability. The U.S. Coast Guard maintains the Pacific Strike Team located in Novato, California. A description of Strike Team capabilities is provided in the **Unified Plan, Annex E, Appendix IV.** The U.S. Environmental Protection Agency capabilities include the use of EPA Technical Assistance Teams located in the lower 48 states. Additionally, the Coast Guard and EPA may call upon the Department of Defense's Alaskan Command (as a member of the Alaska Regional Response Team) to provide HazMat response resources (teams and equipment) from the U.S. Army at Fort Richardson or the U.S. Air Force at Elmendorf Air Force Base.

Due to the distances and time involved in delivering an adequate offensive HazMat response team, federal agencies recommend communities be prepared to take an appropriate defensive response to a HazMat incident. For additional information regarding Federal Response Policy refer to the **Unified Plan, Annex A, Appendix VI.**

C. STATE RESPONSE CAPABILITIES

The Alaska Department of Environmental Conservation is mandated by statute to respond promptly to a discharge of oil or a hazardous substance (AS 46.80.130). Additionally, the ADEC may contract with a person or municipality in order to meet response requirements or establish and maintain a containment and cleanup capability (i.e., personnel, equipment and supplies) (AS 46.09.040).

The ADEC is currently operating in accordance with an August 1992 policy decision which precludes ADEC personnel from responding to situations which require Level A/B protection. A reduction in FY 93 funding resulted in corresponding decreases in the level of equipage, training, and overall readiness. ADEC personnel are prohibited from responding with or using personal protective equipment beyond the Level C protection category (as defined in EPA standards), though ADEC maintains self-contained breathing apparatus equipment and Level A/B protective clothing. For additional information regarding State Response Policy refer to the **Unified Plan, Annex A, Appendix VI.**

While the State has no Level A/B HazMat response teams, the ADEC does have air monitoring equipment in Anchorage and Fairbanks, and it may be possible for the agency to assist in monitoring airborne contaminant levels. Travel distances and resulting time lags, however, would likely preclude State support in meeting control and containment objectives. State responders advocate defensive response strategies for most remote and isolated communities.

The ADEC is negotiating response agreements with local communities to enhance oil and hazardous substance response capabilities through the use of existing local resources. The ADEC will, in turn, reimburse the responding local community for expenses incurred during the response. Under the provisions of the local response agreement, the local community reserves the right to refuse an SOSC's request to respond based on local conditions and overall readiness capability.

In an effort to provide all parts of the State with offensive response capabilities, the ADEC has formally entered into response agreements with both the Municipality of Anchorage and the Fairbanks North Star Borough whereby their HazMat teams may elect to respond on the State's behalf to an incident anywhere in the state when requested by the State On-Scene Coordinator. These agreements address response beyond the normal jurisdictional boundaries of the respective local community. Under the provisions of the agreements, these HazMat teams reserve the right to refuse an SOSC's request to respond based on their local needs and response demands.

The ADEC currently maintains several term contracts for hazardous materials assessment, contaminated sites assessment, and oil spill response. Term contractors are listed in the **Unified Plan, Annex E, Appendix III, Tab X**. These term contractors possess a limited HazMat response capability and normally are not postured for an immediate emergency response, although there is some possibility that response contractors could be mobilized out of Anchorage in time to assist in control efforts for slow leaks.

D. LOCAL RESPONSE CAPABILITIES

There exists no defensive or offensive response capability in the region other than the ability of some facilities to protect worker safety and to address operational leaks. Local resources to meet rescue, plume prediction, off-site evacuation, containment and monitoring objectives in the planning district are very limited.

Indicators of capacity to protect on-site personnel safety are present at nearly all of the large seafood processing facilities. All except one report having emergency plans that include evacuation and notification procedures and having self-contained breathing apparatus (SCBAs) on site. The majority also report a limited amount of Level A or B response equipment and personnel with 40-hour HazMat training. Overall employee hazardous materials training levels are very high. Major transporters also have some Level B response capacity in port. The remoteness of releases and ensuing logistics will complicate response requirements and reduce response ability. On the other hand, remote releases, such as might occur during marine transport, would present lesser risks to the general public.

Most major facilities do not have automatic fire detection and suppression. Fire response for the canneries is typically with hoses and fire extinguishers. The canneries can usually expect some assistance from a community volunteer fire department. A major fire probably could not be controlled, contained, or extinguished. In most cases, volunteers would likely end up trying to save surrounding structures. Historically, major fires have damaged and destroyed cannery facilities at False Pass and King Cove.

HAZMAT: PART FOUR - REFERENCES

The U.S. Coast Guard, the U.S. Environmental Protection Agency, and the Alaska Dept. of Environmental Conservation, 1994. *The Alaska Federal/State Preparedness Plan for Response to Oil & Hazardous Substance Discharges/Releases (Unified Plan) May 1994*.

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